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TRAINING AND RECRUITMENT
OF SKILLED TRADESMEN
IN SELECTED INDUSTRIES
IN CANADA 1951 - 1956



ECONOMICS AND RESEARCH BRANCH,
DEPARTMENT OF LABOUR,
OTTAWA, CANADA.

JUNE 1957



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Training and Recruitment of Skilled Tradesmen in Selected Industries in Canada, 1951 - 1956

**Economics and Research Branch
Department of Labour**

Ottawa, May 1957

**Hon. Milton F. Gregg
Minister**

**A. H. Brown
Deputy Minister**



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INTRODUCTION

For some years the Department of Labour has been obtaining information on the extent of organized in-plant trade training programs in Canada. Such information was first obtained in 1951 by adding a few questions to the questionnaire used in the Department's annual Survey of Working Conditions in Canada. Similar questions were asked in the 1953 and 1954 surveys. As in 1951, such questions were directed only to manufacturing establishments.

In 1956, the Department began a broad research program in the field of skilled manpower training and utilization. A part of this research program dealt with the training of skilled workers in industry. To meet this additional need, information on organized trade training was requested in 1956 from all the establishments covered by the Working Conditions Survey in the mining, transportation and communication, and public utilities industries, as well as in manufacturing.

The range of information sought was also expanded. Information on the number of skilled tradesmen employed, requirements for skilled tradesmen, and the ways in which establishments met these requirements was requested. It was anticipated that this information would reveal the relative importance of organized trade training programs, upgrading, and the hiring of qualified tradesmen from the labour market as sources of skilled tradesmen. To learn more about the part immigration was playing as a source of skilled tradesmen, establishments were asked to separate their hirings of skilled tradesmen into two categories: Canadian and non-Canadian. A sample of the questionnaire used in the April 1956 survey is shown in the Appendix.

The industries covered in the April 1956 survey and the number of establishments responding were as follows:

Mining.....	290 establishments
Manufacturing.....	6,187 “
Transportation, storage and communi- cation.....	723 “
Public utility operation.....	160 “
Total coverage.....	<u>7,360</u> “

In extending the industrial coverage in 1956, emphasis was given to industries in which trade training programs were likely to be found. The construction industry was not included because it does not form part of the Working Conditions Survey.

The classification of industries in this report conforms to that set out in the *Standard Industrial Classification Manual* of the Dominion Bureau of Statistics.

The present report contains over-all statistics on the extent of organized trade training programs in selected Canadian industries. It does not provide information on the nature of such programs—occupations covered, length of training, etc. More detailed information on organized in-plant training programs, derived from a special survey of some 125 manufacturing establishments, was presented in a report published by the Department in 1952, under the title “Plant Training Programs in Selected Manufacturing Industries”. A second report, based on a re-survey of these establishments in January 1956, will be published shortly.

Definition of Terms

The two types of organized trade training considered in this report are apprenticeship and non-apprenticeship training programs.

"By apprenticeship" is meant a training program wherein a person receives training for a skilled trade and advances by progressive stages to the skilled tradesman level. The person receiving the training is called an "apprentice".

"Non-apprenticeship" training refers to organized trade training programs designed to produce skilled tradesmen, but not necessarily following traditional apprenticeship lines. Non-apprenticeship programs, for example, may not have the clearly defined training sequence that is characteristic of apprenticeship training and may, in some cases, be of shorter duration. In this report, the person being trained under a non-apprenticeship program is called a "non-apprentice", for want of a better term.

The term "trainee" includes both apprentices and non-apprentices.

The figures on the number of establishments with organized trade training thus include both apprenticeship and non-apprenticeship training programs. To be classified as an establishment having an organized trade training program, the establishment must have had either apprenticeship or non-apprenticeship training or both.

As stated above, a question on the number of skilled tradesmen employed in the establishment was asked for the first time in the April 1956 survey. The term "skilled tradesman" was not defined in the Questionnaire. Prior investigation of a number of firms suggested that in many the term had a readily understood and generally accepted meaning.

A number of establishments, however, asked for a definition of the term and in these cases the U.S. Dictionary of Occupational Titles' definition of the term "skilled occupations" was provided; this reads as follows:

"This group includes craft and manual occupations that require predominantly a thorough and comprehensive knowledge of processes involved in the work, the exercise of considerable independent judgment, usually a high degree of manual dexterity and, in some instances, extensive responsibility for valuable product or equipment. Workers in these occupations usually become qualified by serving apprenticeship or completing extensive training periods."

To clarify this concept further, it was pointed out that:

1. Production, non-production, and maintenance workers could be classified in the "skilled tradesman" category, depending upon their degree of skill.
2. There is no standard form of training by which a worker becomes skilled. The skilled level may be reached through informal on-the-job training, upgrading, formal training, or combinations of these methods.
3. There is no set period of training which a worker must undergo to become skilled. Any minimum time that is set may be open to question in specific instances. In general, however, a skilled worker must have had at least 18 to 24 months' training before qualifying in his trade.

The term "requirements for skilled tradesmen", as used in Part III of this report, refers to total hirings of skilled tradesmen during the year ended April 1, 1956. Included, therefore, are hirings resulting from depletions of staff (due to retirements, transfers, resignations, etc.) as well as hirings resulting from plant expansion and technological change.

The term "non-Canadian tradesmen" refers to tradesmen who have come to Canada within the last five years. Five years represents the time that it usually takes an immigrant to become a citizen of Canada.

PART I

HIGHLIGHTS OF SURVEY RESULTS

All Training Programs—Apprenticeship and Non-Apprenticeship

1. Between 1951 and 1956, there was a considerable increase—74 per cent—in the number of manufacturing establishments with organized trade training programs. The proportion of establishments in manufacturing with training programs increased from 16 per cent in 1951 to 29 per cent in 1956.

2. In 1956, the manufacturing industry accounted for 89 per cent of all establishments with organized trade training programs and 80 per cent of all trainees in the four industries surveyed (mining, manufacturing, transportation and communication, and public utilities). However, only 29 per cent of the establishments in manufacturing had organized trade training programs, compared to 34 per cent in public utilities.

3. Organized trade training in manufacturing was most heavily concentrated in three industries—printing, publishing, and allied industries; transportation equipment; and iron and steel products.

4. The percentage of manufacturing establishments carrying on organized trade training was higher in the larger than in the smaller establishments.

5. Establishments employing 100 or more plant employees, while comprising only 35 per cent of all manufacturing establishments with training programs, contributed 66 per cent of all trainees.

6. About half the training establishments in manufacturing were training fewer than five people; only 9 per cent were training 25 or more workers.

Apprenticeship Training

1. Between 1953 and 1956, the number of manufacturing establishments with apprenticeship training programs increased 29 per cent. The proportion of establishments in manufacturing with such programs rose from 19 per cent in 1953 to 25 per cent in 1956.

2. In 1956, 90 per cent of all establishments having apprenticeship training in the four industries surveyed and 81 per cent of all apprentices in these industries were in manufacturing. However, only 25 per cent of the establishments in manufacturing had apprenticeship training. The proportion of establishments with training programs was lower in the other three industries.

3. Apprenticeship training in manufacturing was concentrated mainly in three industries: printing, publishing, and allied industries; transportation equipment; and iron and steel products.

Non-Apprenticeship Training

1. In 1956, non-apprenticeship training programs were much less common than apprenticeship programs, and once again most of them were in manufacturing. The proportion of establishments with non-apprenticeship programs was small in each of the four industry groups.

2. Establishments with apprenticeship training far outnumbered those with non-apprenticeship programs in the four industries surveyed, but the number of apprentices was not much greater than that of non-apprentices—three apprentices for every two non-apprentices.

Recruitment of Skilled Tradesmen

1. The two most common methods used by establishments in manufacturing to meet a majority (more than 50 per cent) of their requirements for skilled tradesmen were the hiring of qualified Canadian tradesmen and informal on-the-job training. Only 10 per cent of the establishments met a majority of their requirements through training programs of their own. Relatively few establishments (3 per cent) hired non-Canadian tradesmen to satisfy a majority of their requirements.

2. Manufacturing establishments that did not have training programs relied much more heavily on informal on-the-job training and the hiring of qualified Canadian tradesmen to meet a majority of their requirements than did establishments with training programs.

3. Twenty-one per cent of manufacturing establishments that had organized training met 75 per cent or more of their requirements through their training programs. This contrasts sharply with establishments in public utilities and transportation, storage and communication where a much higher proportion of establishments met 75 per cent or more of their requirements through their own training programs. On the other hand, 41 per cent of the training establishments in manufacturing did not meet any of their requirements through this source.

4. A relatively small proportion of establishments in manufacturing could not meet all their requirements for skilled tradesmen; the proportion was higher in the group with training programs than in that without such programs, although a greater proportion of the latter had shortages amounting to more than 50 per cent of all requirements.

5. Ten per cent of the manufacturing establishments that reported unfulfilled requirements of skilled tradesmen did not meet a majority of their requirements. However, 76 per cent reported shortages of only 1 to 25 per cent.

PART II

EXTENT AND GROWTH OF ORGANIZED TRADE TRAINING, 1951-1956

All Training Programs—Apprenticeship and Non-Apprenticeship.

Organized trade training increased considerably in the manufacturing industry from October 1951 to April 1956. The proportion of manufacturing establishments with organized trade training programs rose from 16 to 29 per cent during the period. The actual number with such programs increased from 1,034 to 1,794, or 74 per cent.

**Table 1. Growth of Organized Trade Training Programs in Manufacturing,
October 1951 to April 1956.**

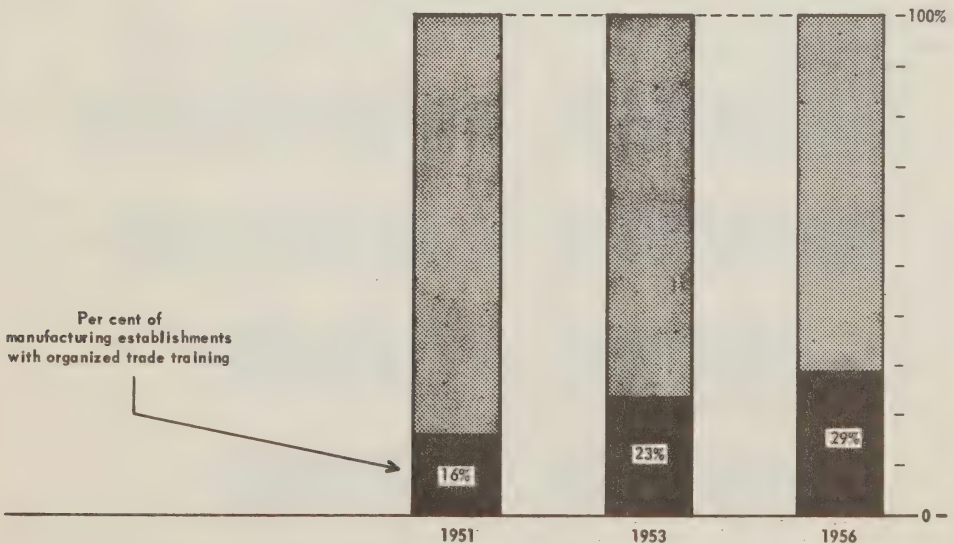
Survey Date	No. of Establishments Covered	Establishments With Organized Trade Training Programs ¹	Percentage of all Establishments with Training
October 1951.....	6,670	1,034	16
April 1954.....	6,684	1,543	23
April 1956.....	6,187	1,794	29

¹ Since survey coverage varied from year to year, the measurements of change can only be considered as approximations. Coverage in 1956, for example, was smaller than in 1951, so that the 1,794 figure probably understates the number of establishments with organized trade training programs.

BETWEEN 1951 AND 1956.

Chart 1.

**THE PROPORTION OF MANUFACTURING ESTABLISHMENTS WITH TRAINING PROGRAMS
INCREASED FROM 16 TO 29 PER CENT**



In 1956, the manufacturing industry accounted for 89 per cent of all establishments with organized trade training programs and for 80 per cent of the trainees in the four industry divisions surveyed. Since industries were selected on the basis of the likelihood of their having organized trade training programs, it is not surprising that manufacturing, the largest industry covered, had the greatest number of establishments with such programs.

When the number of establishments with organized trade training programs in each industry is compared with the total reporting in that industry, it becomes clear that the extent to which training programs exist in the four groups does not vary greatly. The public utilities industry had the greatest proportion of establishments with trade training programs, followed closely by manufacturing. Trade training programs were relatively less frequent in the other two industries, mining and transportation.

Measured in terms of the ratio of trainees to skilled tradesmen, the relative extent of training was again greatest in public utilities and manufacturing. On this basis, the difference between these industries and mining and transportation was not as great as that noted in the preceding paragraph.

Table 2. Extent of Organized Trade Training in Four Industry Divisions, April 1956

	Mining	Manu- facturing	Transpor- tation, Storage & Communica- tion	Public Utility Operation	All Industry Total
No. of establishments covered.....	290	6,187	723	160	7,360
Establishments with organized trade training programs.....	52	1,794	124	54	2,024
Per cent ¹	2	89	6	3	100
Percentage of establishments within each industry carrying on trade training.....	18	29	17	34	28
No. of skilled tradesmen.....	12,662	151,433	17,712	12,055	193,862
No. of trainees.....	1,112	16,340	1,438	1,438	20,328
Per cent of trainees ²	6	80	7	7	100
Ratio of trainees to skilled tradesmen.	1:11	1:9	1:12	1:8	1:10

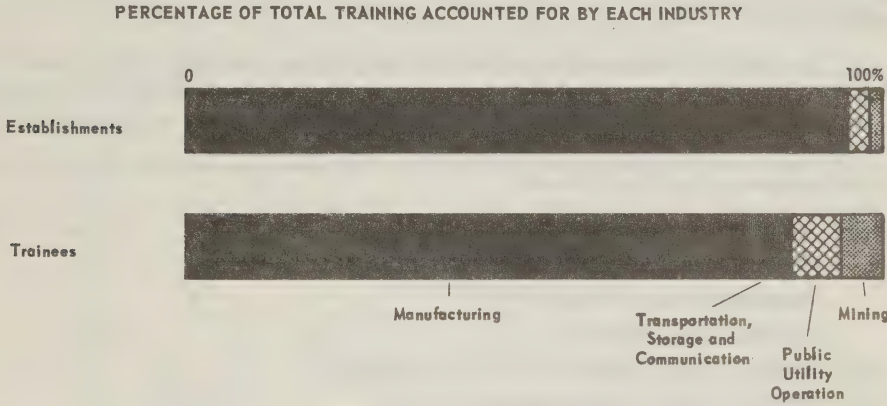
¹Expressed as a percentage of all industry total of 2,024.

²Expressed as a percentage of all industry total of 20,328.

IN 1956.

Chart 2.

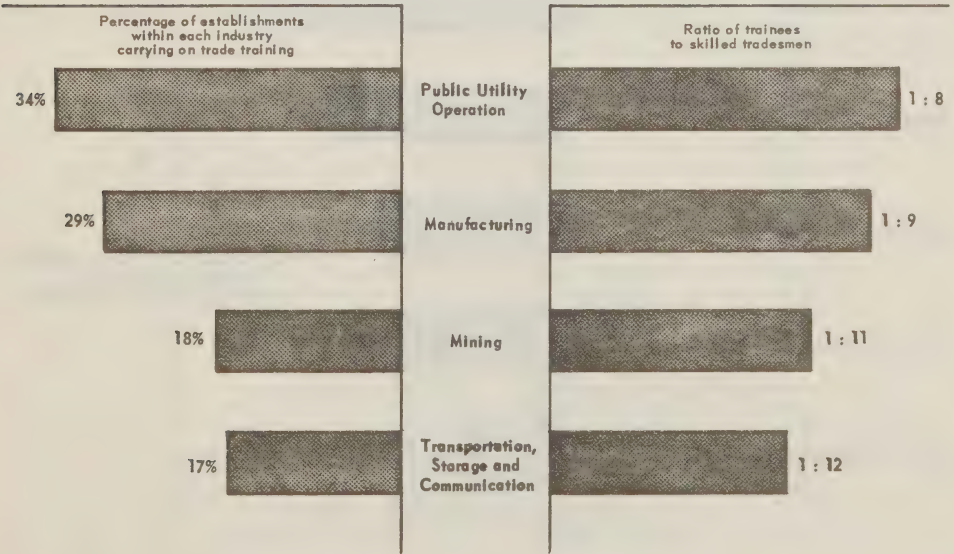
MANUFACTURING ACCOUNTED FOR 89 PER CENT OF ALL ESTABLISHMENTS WITH ORGANIZED TRADE TRAINING AND FOR 80 PER CENT OF ALL TRAINEES



PUBLIC UTILITIES AND MANUFACTURING HAD

. . . the highest percentage of establishments with organized trade training programs

. . . and the highest ratio of trainees to skilled tradesmen



Organized trade training in manufacturing was most heavily concentrated in three industries: printing, publishing, and allied industries; transportation equipment¹; and iron and steel products. These three industries accounted for 58 per cent of all manufacturing establishments with training programs and for 54 per cent of the trainees in manufacturing. They also had the highest proportion of establishments carrying on trade training: 78, 56, and 41 per cent, respectively.

The ratio of trainees to skilled tradesmen in manufacturing varied from 1:6 to 1:21. The ratio was highest in printing, publishing, and allied industries, 1:6; clothing, 1:6; paper products, 1:7; and miscellaneous manufacturing, 1:7.

¹ The auto repair and garages industry accounts for a substantial proportion of organized trade training in the transportation equipment industry.

THREE MANUFACTURING INDUSTRIES
-PRINTING, PUBLISHING AND ALLIED INDUSTRIES
-TRANSPORTATION EQUIPMENT
-IRON AND STEEL PRODUCTS

Chart 3.

**HAD A RELATIVELY HIGH PROPORTION OF ESTABLISHMENTS
WITH ORGANIZED TRADE TRAINING PROGRAMS IN 1956**

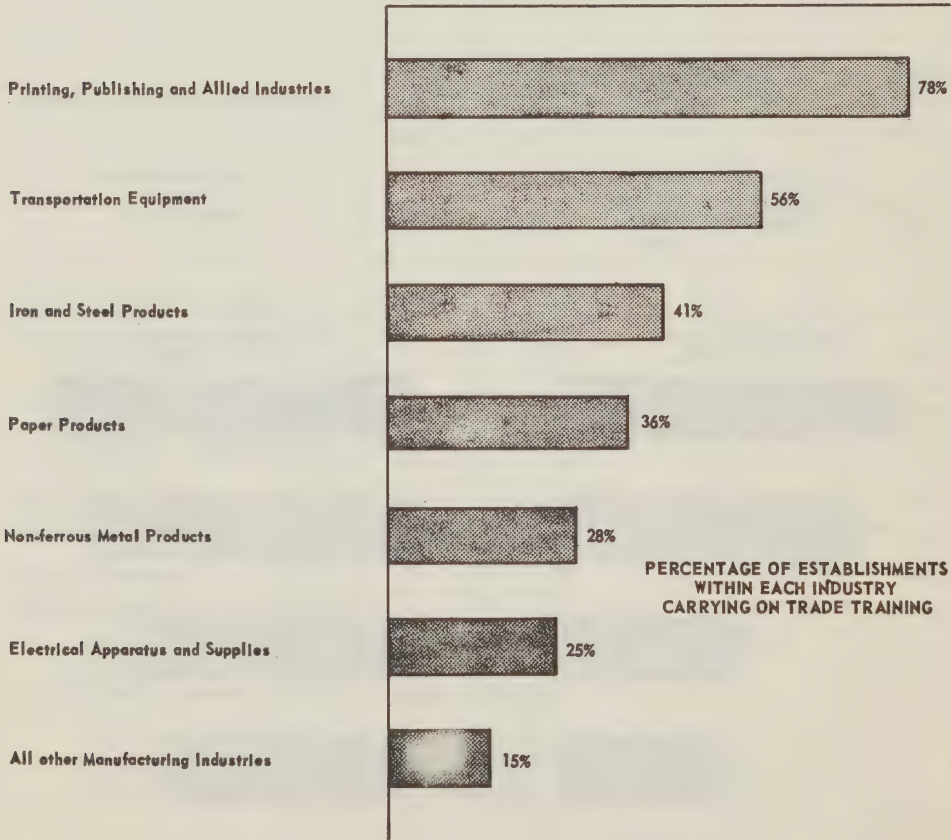


Table 3. Extent of Organized Trade Training in Manufacturing, April 1956.

Industry	No. of Establishments Covered	Establishments With Organized Trade Training Programs		Percentage of Establishments Within Each Industry Carrying on Trade Training	Number of Skilled Tradesmen	Trainees		Ratio of Trainees to Skilled Tradesmen
		No.	% ¹			No.	% ²	
Food and beverages.....	1,020	113	6	11	10,911	868	5	1:13
Tobacco and tobacco products.....	24	4	—	17	497	34	—	1:15
Rubber products.....	31	6	—	19	802	39	—	1:21
Leather products.....	188	40	2	21	3,742	359	2	1:10
Textile products.....	253	51	3	20	4,706	554	3	1:8
Clothing.....	602	123	7	20	6,890	1,092	7	1:6
Wood products.....	747	112	6	15	12,659	1,631	4	1:20
Paper products.....	278	101	6	36	12,162	1,782	11	1:7
Printing, publishing, and allied industries	445	346	19	78	16,219	2,777	17	1:6
Iron and steel products.....	816	334	19	41	30,063	2,636	16	1:11
Transportation equipment.....	641	359	20	56	27,485	3,344	21	1:8
Non-ferrous metal products.....	179	51	3	28	6,552	460	3	1:14
Electrical apparatus and supplies.....	182	45	3	25	7,568	522	3	1:15
Non-metallic mineral products.....	212	35	2	17	2,493	240	2	1:10
Products of petroleum and coal.....	62	14	1	23	1,884	219	1	1:9
Chemical products.....	302	26	1	9	3,657	333	2	1:11
Miscellaneous manufacturing.....	205	34	2	17	3,143	450	3	1:7
Manufacturing Total.....	6,187	1,794	100	29	151,433	16,340	100	1:9

¹ Expressed as a percentage of manufacturing total of 1,794.

² Expressed as a percentage of manufacturing total of 16,340.

The percentage of establishments in manufacturing with training varied directly with their size; that is, the percentage increased with the size of the plant work-force. For example, only 19 per cent of the establishments with 1 to 14 plant workers carried on training, compared to 55 per cent of those with 500 employees or more.

Sixty-five per cent of all establishments with organized training programs employed fewer than 100 plant employees and these establishments accounted for 34 per cent of all trainees in manufacturing. On the other hand, establishments employing 100 or more plant employees, while constituting only 35 per cent of all training establishments, contributed 66 per cent of the trainees. Establishments with 500 or more plant employees contributed 31 per cent of the trainees, although they comprised only 9 per cent of all training establishments.

Table 4. Extent of Organized Training in Manufacturing, by Size of Establishment, April 1956.

Size of Establishment	No. of Establishments Covered	Establishments With Organized Trade Training		Trainees		Percentage of Establishments With Training in each Size Group
		No.	% ¹	No.	% ²	
1-14 plant employees.....	884	170	9	341	2	19
15-39 plant employees.....	2,266	623	35	2,692	16	27
50-99 plant employees.....	1,353	372	21	2,649	16	27
100-499 plant employees.....	1,377	465	26	5,674	35	34
500 and more plant employees..	294	164	9	4,984	31	55
Total.....	6,174 ³	1,794	100	16,340	100	29

¹ Expressed as a percentage of total number of establishments with organized trade training (1,794).
² Expressed as a percentage of total number of trainees (16,340).
³ Total does not agree with totals shown in previous tables; 13 establishments did not report number of non-office employees.

Approximately half the manufacturing establishments with training programs (814 of 1,632) were training fewer than five people. Only 9 per cent (142 of 1,632) were training 25 or more workers.

The situation in the other three industry divisions was similar in that most establishments were training fewer than 11 workers. In both mining and public utility operation, however, approximately 26 per cent of the training establishments were training 25 or more workers.

Table 5. Distribution of Training Establishments, by Number of Trainees, April 1956.

Number of Trainees	Number of Establishments with Training Programs							
	Mining		Manufacturing		Transportation, Storage, and Communication		Public Utility Operation	
	No.	%	No.	%	No.	%	No.	%
1— 4.....	25	50	814	50	54	65	15	33
5— 10.....	7	14	444	27	10	12	14	31
11— 24.....	5	10	232	14	8	9	5	11
25— 50.....	9	18	103	6	6	7	7	15
51— 99.....	—	—	27	2	2	3	2	4
100—199.....	3	6	8	1	2	3	2	4
200 and over.....	1	2	4	2	1	1	1	2
Total ¹	50	100	1,632	100	83	100	46	100

¹ Totals do not agree with totals in Table 1 because some establishments that reported training programs were not training any workers during survey period; others did not state the number being trained.
² Less than one-half of one per cent.

Apprenticeship Training

The growth in apprenticeship training in the manufacturing industry was considerable in the period April 1953 to April 1956. This growth is evidenced by:

1. A greater number of establishments with apprenticeship programs;
2. A higher percentage of establishments with apprenticeship programs;
3. A greater number of apprentices;
4. A higher ratio of apprentices to non-office employees.

The number of establishments with apprenticeship programs increased 29 per cent, from 1,189 in 1953 to 1,530 in 1956. During this period the proportion of establishments with apprenticeship training increased from 19 to 25 per cent. At the same time, not only did the number of apprentices rise from 7,175 to 9,953 (39 per cent) but the ratio of apprentices to non-office workers increased from 1 in 37 in 1953 to 1 in 30 in 1956.

**Table 6. Growth in Apprenticeship Training in Manufacturing,
April 1953 to April 1956**

Survey Date	Number of Establishments Covered	Establishments With Apprenticeship Training	Percentage of All Establishments with Apprenticeship Training ¹	Number of Apprentices	Number of Non-Office Employees	Ratio of Apprentices to Non-Office Employees
April 1953 ²	6,385	1,189	19	7,175	274,106	1:37
April 1954.....	6,684	1,280	19	7,682	262,186	1:33
April 1956.....	6,187	1,530	25	9,953	308,836	1:30

¹ Since survey coverage varied from year to year, the measurements of change can only be considered as approximations. Coverage in 1956, for example, was smaller than in 1953 so that the 1,530 figure probably understates the number of establishments with apprenticeship training.

² Figures on apprenticeship training were not available for 1951.

In 1956, the manufacturing industry accounted for 90 per cent of all establishments with apprenticeship training and for 81 per cent of all apprentices in the four industry divisions surveyed. Since industries were selected on the basis of the likelihood of their having organized trade training programs, it is not surprising that manufacturing, the largest industry covered, had the greatest number of establishments with apprenticeship training.

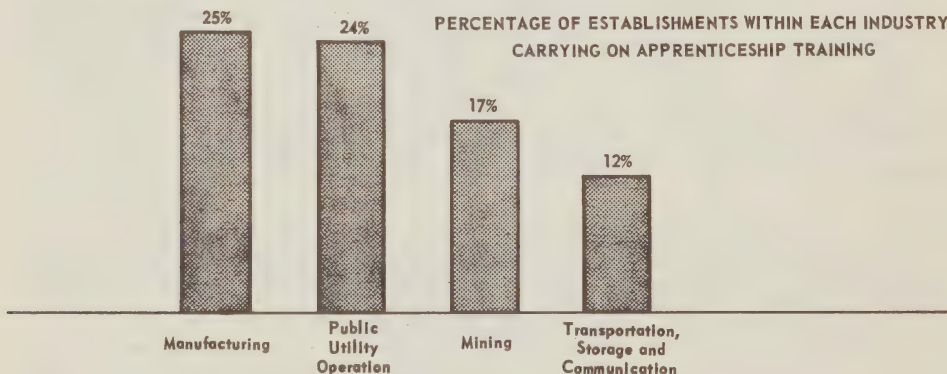
The proportion of establishments with apprenticeship training within each of the four industrial groups did not differ very greatly. Manufacturing still led, 25 per cent of its establishments having apprenticeship training, and public utility operation ran a close second, with 24 per cent. In mining, the proportion was 17 per cent, and in transportation and communication it dropped to 12 per cent.

The ratio of apprentices to skilled tradesmen varied only slightly in the four industry groups. It was greater in mining (1:14) than in manufacturing (1:15).

IN 1956

Chart 4.

**THE PROPORTION OF ESTABLISHMENTS WITH APPRENTICESHIP
PROGRAMS VARIED FROM 12 TO 25 PER CENT**



**THE RATIO OF APPRENTICES TO SKILLED TRADESMEN
WAS HIGHEST IN PUBLIC UTILITIES**

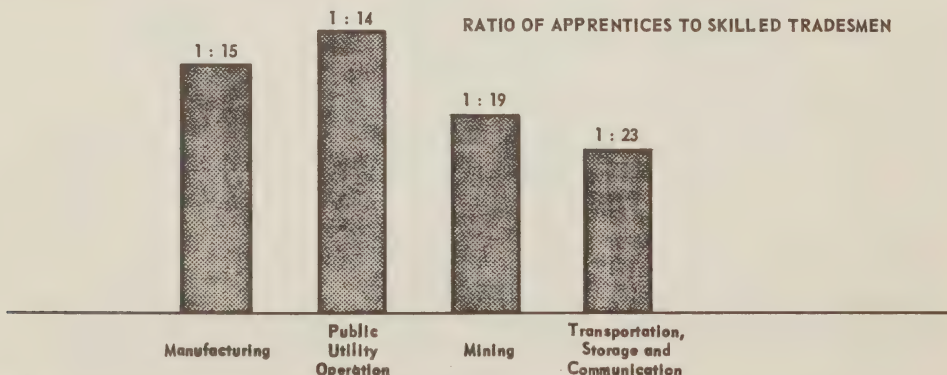


Table 7. Extent of Apprenticeship Training in Four Industry Divisions, April 1956

Industry	No. of Establishments Covered	Establishments With Apprenticeship Training		Percentage of Establishments Within Each Industry Having Apprenticeship Training	Apprentices		No. of Skilled Tradesmen	Ratio of Apprentices to Skilled Tradesmen
		No.	% ¹		No.	% ²		
Mining.....	290	50	3	17	902	7	12,662	1:14
Manufacturing.....	6,187	1,530	90	25	9,953	81	151,433	1:15
Transportation, storage, and communication.....	723	87	5	12	929	8	17,712	1:19
Public utility operation.....	160	38	2	24	517	4	12,055	1:23
All industry total.....	7,360	1,705	100	23	12,301	100	193,862	1:16

¹ Expressed as a percentage of all industry total of 1,705.

² Expressed as a percentage of all industry total of 12,301.

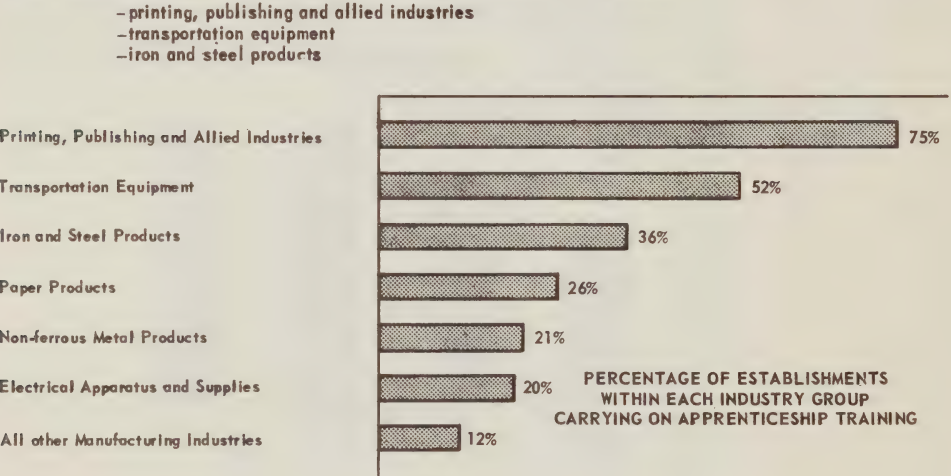
Apprenticeship training in manufacturing was concentrated mainly in three industries: printing, publishing, and allied industries; transportation equipment¹; and iron and steel products. These three industries together accounted for 63 per cent of all manufacturing establishments with apprenticeship training and for 59 per cent of all apprentices. The proportion of establishments within these three industries that had apprenticeship training was also higher than in any other—75, 52, and 36 per cent respectively.

The pattern of the ratio of apprentices to skilled tradesmen was somewhat different, although the printing, publishing and allied industries still ranked first with one apprentice to every six skilled tradesmen. The clothing industry, with a ratio of one to eight ranked second, followed by leather products with 1 to 13 and miscellaneous manufacturing with 1 to 14. The variation, however, was very wide and ranged all the way down to 1:73 for rubber products.

¹ Includes auto repair firms and garages.

THE THREE MANUFACTURING INDUSTRIES WITH THE HIGHEST PROPORTION OF ESTABLISHMENTS HAVING APPRENTICESHIP TRAINING IN 1956 WERE

Chart 5.



THE RATIO OF APPRENTICES TO SKILLED TRADESMEN VARIED WIDELY

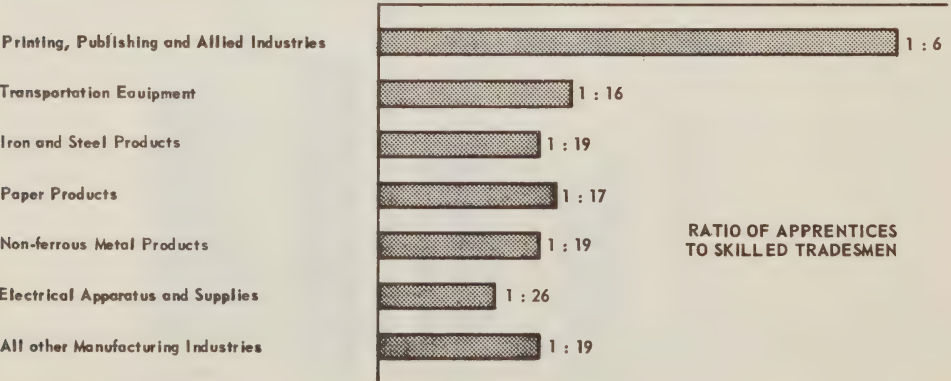


Table 8. Extent of Apprenticeship Training in Manufacturing, April 1956

Manufacturing Industry	No. of Establishments Covered	Establishments With Apprenticeship Training		Percentage of Establishments Within Each Industry Having Apprenticeship	Apprentices		Number of Skilled Tradesmen	Ratio of Apprentices to Skilled Tradesmen
		% ¹			No.	% ²		
		No.	%					
Foods and beverages.....	1,020	83	5	8	375	4	10,911	1:29
Tobacco and tobacco products.....	24	3	—	13	28	—	497	1:18
Rubber products.....	31	4	—	13	11	—	802	1:73
Leather products.....	188	34	2	18	288	3	3,742	1:13
Textile products.....	255	34	2	13	175	2	4,706	1:27
Clothing.....	602	102	7	17	813	8	6,890	1:8
Wood products.....	747	88	6	12	481	5	12,659	1:26
Paper products.....	278	73	5	26	722	7	12,162	1:17
Printing, publishing, and allied industries.....	445	334	22	75	2,560	26	16,219	1:6
Iron and steel products.....	816	291	19	36	1,586	16	30,063	1:19
Transportation equipment.....	641	332	22	52	1,703	17	27,485	1:16
Non-ferrous metal products.....	179	38	3	21	349	4	6,552	1:19
Electrical apparatus and supplies.....	182	36	2	20	295	3	7,568	1:26
Non-metallic mineral products.....	212	28	2	13	139	1	2,493	1:18
Products of petroleum and coal.....	62	4	—	6	41	—	1,884	1:46
Chemical products.....	302	20	1	7	161	2	3,657	1:23
Miscellaneous manufacturing.....	205	26	2	13	226	2	3,143	1:14
Manufacturing total.....	6,187	1,530	100	25	9,953	100	151,433	1:15

¹ Expressed as a percentage of manufacturing total of 1,530.² Expressed as a percentage of manufacturing total of 9,953.

Non-Apprenticeship Training

Establishments with non-apprenticeship training programs were much fewer than those with apprenticeship programs, and once again most of them were in manufacturing.

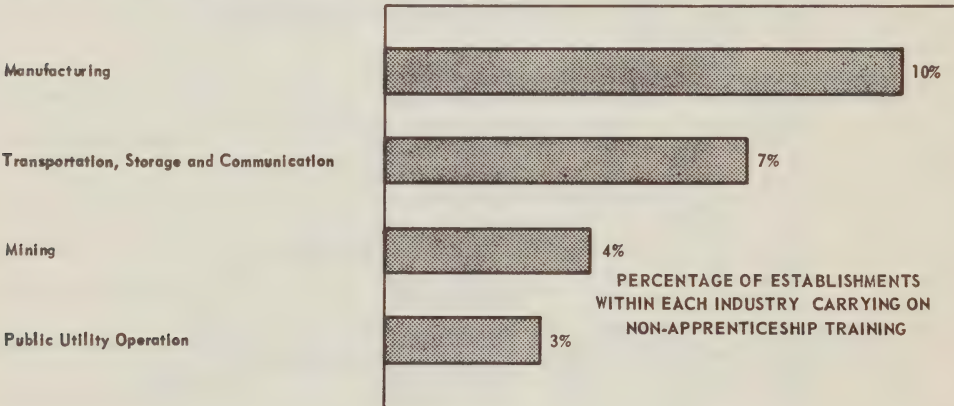
The proportion of establishments with non-apprenticeship programs was small in each of the four industry groups. In transportation and communication, 10 per cent of establishments had such programs and in manufacturing 7 per cent. In mining and public utility operation, the proportion dropped to 4 and 3 per cent respectively.

The ratio of non-apprentices to skilled tradesmen in the establishments with such training programs was also lower than that in plants with apprenticeship training. Non-apprentice to skilled tradesmen ratios ranged from 1 to 13 for public utility operation to 1 to 60 in mining. In manufacturing establishments, there was one non-apprentice for every 24 skilled tradesmen.

IN 1956.

Chart 6.

ONLY A SMALL PROPORTION OF ESTABLISHMENTS IN THE FOUR INDUSTRY GROUPS HAD NON-APPRENTICESHIP PROGRAMS



THE RATIO OF NON-APPRENTICES TO SKILLED TRADESMEN VARIED CONSIDERABLY FROM INDUSTRY TO INDUSTRY

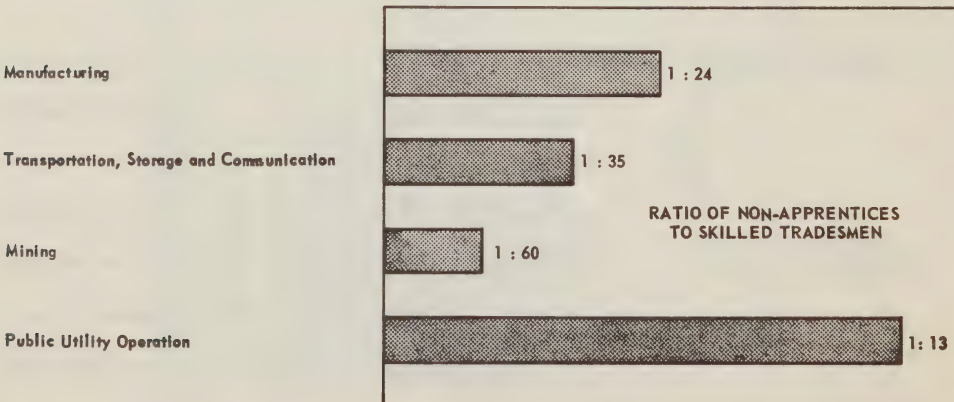


Table 9. Extent of Non-Apprenticeship Training in Four Industry Divisions, April 1956

Industry	No. of Establishments Covered	Establishments With Non-Apprenticeship Training		Percentage of Establishments Within Each Industry Having Non-Apprenticeship Training	Non-Apprentices		No. of Skilled Tradesmen	Ratio of Non-Apprentices to Skilled Tradesmen
		No.	% ¹		No.	% ²		
Mining.....	290	8	1	4	210	3	12,662	1:60
Manufacturing.....	6,187	476	85	7	6,387	80	151,433	1:24
Transportation, storage, and communication.....	723	50	9	10	509	6	17,712	1:35
Public utility operation.....	160	29	5	3	921	11	12,055	1:13
All industry total.....	7,360	563	100	8	8,027	100	193,862	1:24

¹ Expressed as a percentage of all industry total of 563.

² Expressed as a percentage of all industry total of 8,027.

Within manufacturing, printing and publishing, iron and steel products and transportation equipment¹ had the greatest number of establishments with non-apprenticeship training programs, as was the case with apprenticeship training.

The proportion of establishments within an industry reporting non-apprenticeship programs, however, was highest in the products of petroleum and coal industry (18 per cent), followed by transportation equipment (16 per cent) and paper products (15 per cent).

Slightly more than one-quarter of the non-apprentices were in the transportation equipment industry; the paper products industry accounted for 17 per cent and iron and steel products for 16 per cent. These three industries together had well over half the non-apprentices in manufacturing.

The highest ratio of non-apprentices to skilled tradesmen was in paper products and products of petroleum and coal, where there was one non-apprentice for every eleven skilled tradesmen. The ratio ranged down to 1:84 in the wood products industry.

¹ Includes auto repair firms and garages.

Table 10. Extent of Non-Apprenticeship Training in Manufacturing, April 1956

Industry	No. of Establishments Covered	Establishments With Non-Apprenticeship Programs		Percentage of Establishments Within Each Industry Reporting Non-Apprenticeship Programs	Non-Apprentices		Number of Skilled Tradesmen	Ratio of Non-Apprentices to Skilled Tradesmen
		% ¹			No.	% ²		
		No.	%					
	1,020	35	7	3	493	8	10,911	1:22
Foods and beverages.....	24	1	—	4	6	—	497	1:83
Tobacco and tobacco products.....	31	3	1	10	28	—	802	1:29
Rubber products.....	188	6	1	3	71	1	3,742	1:53
Leather products.....	253	27	6	11	379	6	4,706	1:12
Textile products.....	602	22	5	4	279	4	6,890	1:25
Clothing.....	747	29	6	4	150	2	12,659	1:84
Wood products.....	278	43	9	15	1,060	17	12,162	1:11
Paper products.....	445	45	9	10	217	3	16,219	1:75
Printing, publishing, and allied industries.....	816	86	18	11	1,050	16	30,063	1:29
Iron and steel products.....	641	104	22	16	1,641	26	27,485	1:17
Transportation equipment.....	179	17	4	9	111	2	6,552	1:59
Non-ferrous metal products.....	182	13	3	7	227	4	7,568	1:33
Electrical apparatus and supplies.....	212	12	3	6	101	2	2,493	1:25
Non-metallic mineral products.....	62	11	2	18	178	3	1,884	1:11
Products of petroleum and coal.....	302	11	2	4	172	3	3,657	1:21
Chemical products.....	205	11	2	5	224	3	3,143	1:14
Miscellaneous manufacturing.....								
Manufacturing total.....	6,187	476	100	8	6,387	100	151,433	1:24

¹ Expressed as a percentage of manufacturing total of 476.

² Expressed as a percentage of manufacturing total of 6,387.

Comparison of Apprenticeship and Non-Apprenticeship Programs

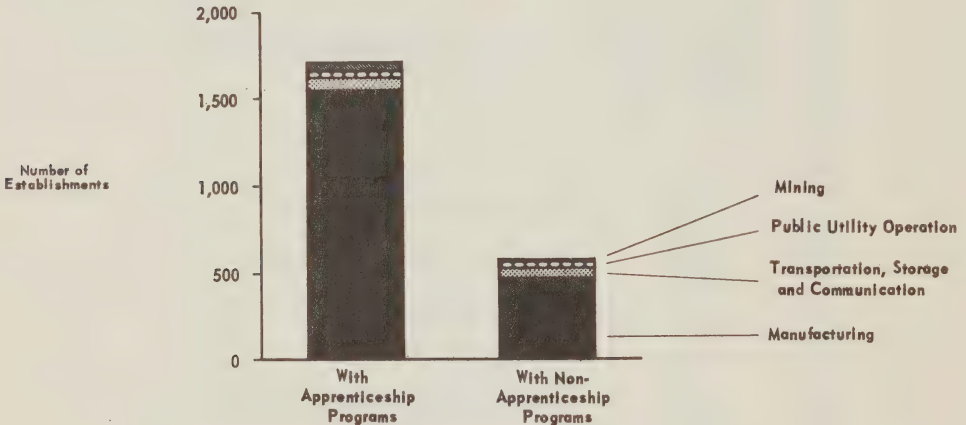
Establishments with apprenticeship programs outnumbered those with non-apprenticeship programs by at least three to one in the four industry groups covered. The ratio of apprentices to non-apprentices, however, was much lower—1.5 apprentices to every one non-apprentice.

In one of the four major industries (public utilities) and in six of the individual manufacturing industries, in fact, more non-apprentices than apprentices were being trained, although in most of these, the actual numbers were comparatively small. The ratio of non-apprentices to apprentices was highest in the products of petroleum and coal where there were five non-apprentices for every one apprentice. This was also the only industry with more establishments with non-apprenticeship training programs than with apprenticeship programs.

IN 1956

Chart 7.

**THERE WERE AT LEAST THREE ESTABLISHMENTS WITH APPRENTICESHIP PROGRAMS
FOR EVERY ONE WITH NON-APPRENTICESHIP PROGRAMS**



**. BUT THERE WERE ONLY THREE APPRENTICES
FOR EVERY TWO NON-APPRENTICES**

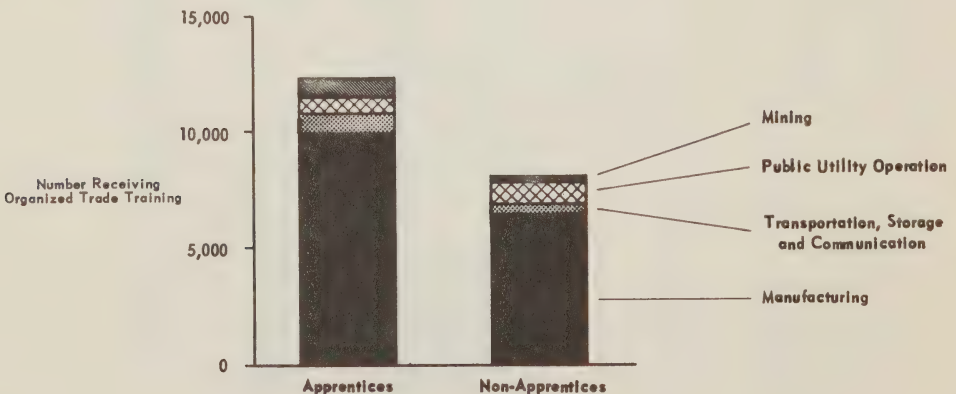


Table 11. Comparison of Extent of Apprenticeship and Non-Apprenticeship Training in Four Industry Divisions, April 1956

Industry	No. of Establishments Covered	Establishments With Non-Apprenticeship Programs		Number of Non-Apprentices	Establishments With Apprenticeship Programs		Number of Apprentices	Ratio of Non-Apprentices to Apprentices	Ratio of Non-Apprenticeship Programs to Apprenticeship Programs
		No.	% ¹		No.	% ²			
Mining.....	290	8	1	210	50	3	902	1.4.3	1.6.3
Manufacturing.....	6,187	476	85	6,387	1,530	90	9,953	1.1.6	1.3.2
Foods and beverages.....		35		493	83		375	1.0.8	1.2.4
Tobacco and tobacco products.....		1		6	3		28	1.4.7	1.3.0
Rubber products.....		3		28	4		11	1.0.4	1.1.3
Leather products.....		6		71	34		288	1.4.1	1.5.7
Textile products.....		27		379	34		175	1.0.5	1.1.3
Clothing.....		22		279	102		813	1.2.9	1.4.6
Wood products.....		29		150	88		481	1.3.2	1.3.0
Paper products.....		43		1,060	73		722	1.0.7	1.1.7
Printing, publishing, and allied industries.....		45		217	334		2,560	1.1.8	1.7.4
Iron and steel products.....		86		1,050	291		1,586	1.1.5	1.3.4
Transportation equipment.....		104		1,641	332		1,703	1.1.0	1.3.2
Non-ferrous metal products.....		17		111	38		349	1.3.1	1.2.2
Electrical apparatus and supplies.....		13		227	36		295	1.1.3	1.2.8
Non-metallic mineral products.....		12		101	28		139	1.1.4	1.2.3
Products of petroleum and coal.....		11		178	4		41	1.0.2	1.0.4
Chemical products.....		11		172	20		161	1.0.9	1.1.8
Miscellaneous manufacturing.....		11		224	26		226	1.1.0	1.2.4
Transportation, storage, and communication.....	723	50	9	509	87	5	929	1.1.8	1.1.7
Public utility operation.....	160	29	5	921	33	2	517	1.0.6	1.1.3
All industry total.....	7,360	563 ³	100	8,027	1,705 ³	100	12,301	1.1.5	1.3.0

¹ Expressed as a percentage of all industry total of 563.

² Expressed as a percentage of all industry total of 1,705.

³ The addition of these figures does not equal the total number of establishments with organized trade training programs shown in earlier tables since some had both types of training.

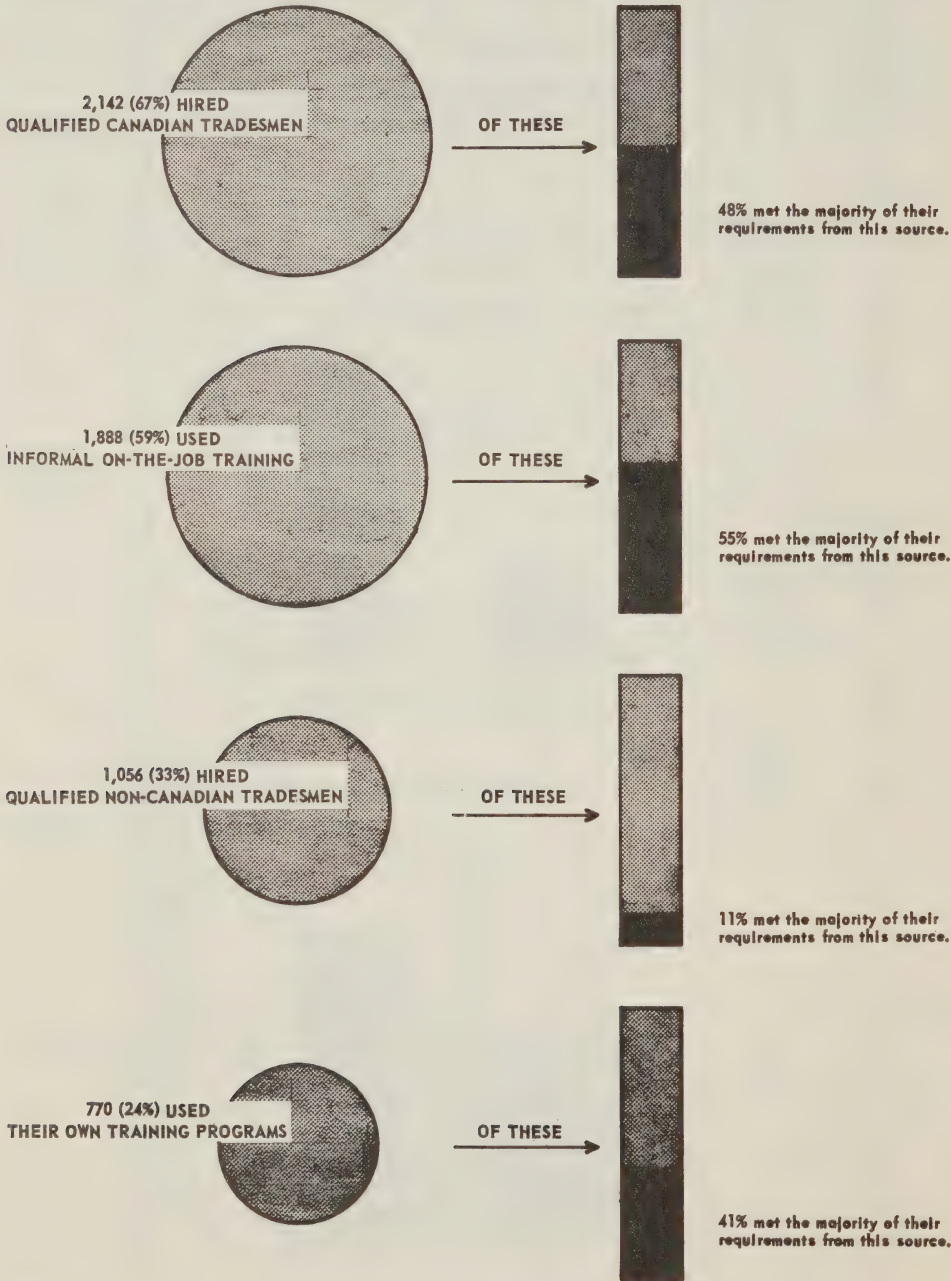
IN 1956

Chart 8.

THE TWO SOURCES MOST COMMONLY USED BY MANUFACTURING ESTABLISHMENTS
TO HELP MEET THEIR REQUIREMENTS FOR SKILLED TRADESMEN WERE

- HIRING OF QUALIFIED CANADIAN TRADESMEN, AND
- INFORMAL ON-THE-JOB TRAINING

OF THE ESTABLISHMENTS SURVEYED . . .



PART III

RECRUITMENT OF SKILLED TRADESMEN

Sources of Skilled Tradesmen

The preceding parts of this report provide data on the extent of organized trade training activities in the four industries covered. To what extent did such programs help meet the requirements of industry for skilled tradesmen? To assist in answering this question, the establishments surveyed were asked to report the sources from which skilled tradesmen were obtained during the 12 months ended April 1956. Four different sources were indicated as shown in Table 12.

Most manufacturing establishments hired qualified Canadian tradesmen or relied on informal on-the-job training or both as a means of helping to meet their requirements for skilled tradesmen during this period. Since relatively few qualified Canadian tradesmen were unemployed during the period, the use of the first source meant that in many cases workers were being attracted from other jobs at which they were already employed. This, combined with the fact that more employers used the former method than any other, is an indication of the intense competition that existed for these types of workers.

On the other hand, some establishments had no requirements at all for skilled tradesmen. Twenty-four per cent (1,007) of the manufacturing establishments answering this question reported no requirements during the period. It is probable that in some of these cases the number of skilled tradesmen employed actually declined.

Fewer establishments obtained skilled tradesmen from organized trade training programs than from any other source in the year ended April 1956. This source was used by even fewer establishments than the number hiring qualified immigrants.

It should be noted that the figures in Table 12 show the number and per cent of establishments using a particular source. The source may have been used to satisfy one per cent of the establishment's requirements or 100 per cent. The extent to which each source was used is indicated in Table 13.

Table 12. Sources of Skilled Tradesmen for Manufacturing Establishments, April 1955-1956

Source	Establishments Obtaining Tradesmen from Each Source	
	No.	%
Organized trade training programs.....	770 ¹	24
Informal on-the-job training.....	1,888	59
Hiring of qualified Canadian tradesmen.....	2,142	67
Hiring of qualified non-Canadian tradesmen.....	1,056	33
Total establishments with requirements for skilled tradesmen during period.....	3,183 ²	100 ²
Establishments with no requirements for skilled tradesmen during period.....	1,007	—

¹This figure does not correspond to the total for establishments with organized trade training programs appearing in Part I because some of the establishments with such programs did not state their sources of skilled tradesmen, and some did not meet any of their requirements from this source.

²The figures do not add up to this total because establishments using more than one source are counted more than once.

Table 13 shows the extent to which the manufacturing establishments surveyed met a majority of their requirements for skilled tradesmen from the different sources specified.

Only 10 per cent of the manufacturing establishments reporting met the majority (over 50 per cent) of their requirements through training programs of their own. Most establishments satisfied a majority of their requirements through informal on-the-job training and by hiring qualified workers from the labour market. Thirty-six per cent obtained a majority of their requirements by hiring qualified tradesmen, both Canadian and non-Canadian. Another 33 per cent relied on informal on-the-job training or upgrading of workers within their own establishments to satisfy a majority of their requirements for skilled tradesmen.

These data further indicate the heavy reliance placed by employers on hiring from the labour market and upgrading as the primary means of meeting their needs for skilled tradesmen.

Only 3 per cent of the establishments reported having met the majority of their requirements through hiring qualified non-Canadian tradesmen. This may seem unduly low in view of the fact that 33 per cent reported using this method for some of their requirements (see Table 12). This difference indicates that although many employers hired some qualified immigrant tradesmen, a much smaller number used this source to any considerable extent.

Table 13. Manufacturing Establishments Meeting More Than 50% of Their Requirements for Skilled Tradesmen, by Source of Tradesmen, April 1955-1956

Source	Establishments Meeting More Than 50% of Their Requirements	
	No.	%
Organized trade training programs.....	317	10
Informal on-the-job training.....	1,031	33
Hiring of qualified Canadian tradesmen.....	1,034	33
Hiring of qualified non-Canadian tradesmen.....	113	3
Using more than one of above sources.....	658	21
Establishments meeting majority of requirements.....	3,153	100

The sources from which manufacturing establishments obtained skilled tradesmen did not vary greatly between those with training programs and those without such programs. In both cases, the two methods most commonly used were informal on-the-job training and the hiring of qualified Canadian tradesmen. The two groups did not differ appreciably in their relative use of these two methods.

There was a difference, however, in the proportion of establishments, hiring qualified non-Canadian tradesmen. Thirty-seven per cent of the training establishments hired non-Canadian tradesmen, compared with only 30 per cent of the non-training group. The reason for this difference is not clear. It may have been partly due to the fact that establishments with training programs could more easily assist immigrant tradesmen to adapt quickly to Canadian practices and working conditions. It may also have been because requirements for skilled tradesmen were greater in plants with training programs, than in those without such programs.

It should be noted that Table 14 shows the number and per cent of establishments using a particular source. The source may have been used to satisfy 1 per cent of the establishment's requirements or 100 per cent. The extent to which each source was used by establishments with and without training programs is shown in Table 15.

Table 14. Sources of Skilled Tradesmen for Manufacturing Establishments with Requirements for Skilled Tradesmen, by Training Status, April 1955-1956

Source	Establishments With Training Programs		Establishments Without Training Programs	
	Number Obtaining Tradesmen from Each Source	Per Cent of All Establishments	Number Obtaining Tradesmen from Each Source	Per Cent of All Establishments
Informal on-the-job training.....	745	57	1,123	60
Hiring of qualified Canadian tradesmen.....	871	66	1,255	67
Hiring of qualified non-Canadian tradesmen..	480	37	561	30
Total establishments with requirements.....	1,310 ¹	100 ¹	1,873 ¹	100 ¹
Total establishments with no requirements..	89	—	918	—

¹ The figures do not add up to this total because establishments using more than one source are counted more than once.

Table 15 shows, for manufacturing establishments with training programs and for those without such programs, the number of plants for which each of the sources provided the majority (more than 50 per cent) of total requirements for skilled tradesmen.

This comparison reveals that manufacturing establishments without training programs relied much more heavily on informal on-the-job training and on the hiring of qualified tradesmen to meet their requirements than did those with organized trade training programs. Of the establishments with no training programs, 41 per cent met the majority of their requirements for skilled tradesmen by informal on-the-job training and another 38 per cent by hiring qualified Canadian tradesmen. The comparable figures for establishments with organized trade training programs were 20 and 25 per cent respectively. Establishments without training programs would, of course, have had to rely more heavily on other sources.

Table 15. Manufacturing Establishments Meeting More Than 50% of Their Requirements for Skilled Tradesmen, by Training Status, April 1955-1956

Source	Establishments Meeting More Than 50% of Their Requirements			
	Those With Training Programs		Those Without Training Programs	
	No.	%	No.	%
Informal on-the-job training.....	265	20	753	41
Hiring of qualified Canadian tradesmen.....	320	25	706	38
Hiring of qualified non-Canadian tradesmen.....	37	3	75	4
Organized trade training.....	317	24	N/A	N/A
Using more than one of above sources.....	359	28	321	17
Establishments meeting majority of requirements....	1,298	100	1,855	100

It is interesting to note that both types of establishments, those with as well as those without organized trade training programs, appeared to rely on the hiring of qualified non-Canadian tradesmen to approximately the same extent. The proportions meeting the majority of their requirements from this source were 3 and 4 per cent respectively.

Extent to Which Organized Trade Training Met Skilled Manpower Requirements

A more detailed picture of the contribution made by organized trade training programs to skilled tradesmen requirements in establishments having such programs is shown in Table 16 for the four major industry groups covered in this survey.

Trade training programs made the greatest contribution of skilled tradesmen, relative to requirements, in public utilities and in transportation, storage and communication. In these two industries, such programs provided three-quarters or more of all requirements for skilled tradesmen in 51 and 40 per cent respectively of the establishments covered. Comparable figures for manufacturing and mining were much lower, 21 and 15 per cent respectively.

It should be noted that trade training programs in 57 per cent of the mining and 41 per cent of the manufacturing establishments made no contribution at all to requirements for skilled tradesmen during the period April 1955-1956. The main reason for this was probably that these programs were started during this period and thus had not been in operation long enough for any workers to have completed the required training period.

Table 16. Extent to Which Organized Trade Training Programs Met Skilled Manpower Requirements in Establishments Having Such Programs, April 1955-1956

Percentage of Requirements Met Through Training Programs	Mining		Manufacturing		Transportation, Storage, and Communication		Public Utility Operation	
	Number of Establishments	Percentage	Number of Establishments	Percentage	Number of Establishments	Percentage	Number of Establishments	Percentage
100.....	4	10	182	14	21	26	13	33
79-99.....	2	5	95	7	11	14	7	18
51-74.....	5	12	40	3	4	5	—	—
26-50.....	1	2	152	12	6	8	3	7
1-25.....	6	14	301	23	15	19	5	12
0.....	24	57	540	41	22	28	12	30
Total establishments with training programs ¹ ...	42	100	1,310	100	79	100	40	100

¹These totals do not correspond to those for establishments with organized trade training programs appearing in Part I because some of the establishments with such programs did not reply to the question on recruitment of tradesmen.

Unfilled Requirements for Skilled Tradesmen

As indicated at the beginning of Part III, the establishments surveyed were asked to report the sources from which skilled tradesmen were obtained during the 12 months ended April 1956. They were also asked, where they were not able to meet all their requirements, to report the percentage not met. Table 17 shows the degree to which manufacturing establishments were unable

to meet all their requirements for skilled tradesmen during the period April 1955-1956. These data throw more light on the extent of shortages of skilled tradesmen during this period.

During the 12 months ended April 1956, 10 per cent of the manufacturing establishments with unfulfilled requirements for skilled tradesmen, reported that these amounted to more than 50 per cent of their total need for such workers. On the other hand, 76 per cent of the manufacturing establishments with unfilled requirements reported shortages amounting to 1 to 25 per cent of their total need. These figures suggest that in general the degree of shortage of skilled tradesmen during the period covered was not very marked.

It should be kept in mind that the above data do not tell the whole story about shortages of skilled tradesmen. Although relatively few employers reported a shortage of skilled tradesmen and although these reported a relatively small degree of shortage, many may have found it necessary to hire less qualified people than previously or to upgrade workers into skilled jobs before they were fully trained for such positions.

The extent of shortages of skilled tradesmen varied between establishments with and without organized trade training programs. In manufacturing, 15 per cent of the establishments with training programs could not meet all their requirements, compared with 6 per cent for plants without any training program.

In terms of the relative extent of the shortages, however, the non-training establishments experienced the greater shortages. Fifteen per cent of the non-training group could not meet a majority of their requirements, compared with 6 per cent of the training group.

Table 17. Extent to Which Manufacturing Establishments Did Not Meet All Requirements for Skilled Tradesmen, by Training Status, April 1955-1956

Percentage of Requirements Not Met	Manufacturing Establishments with Requirements for Skilled Tradesmen during Period					
	All Establishments		Those With Training Programs		Those Without Training Programs	
	No.	%	No.	%	No.	%
100.....	12	4	2	1	10	9
75-99.....	7	2	3	1	4	3
51-74.....	11	4	7	4	4	3
26-50.....	44	14	27	14	17	15
1-25.....	237	76	157	80	80	70
Number of establishments not meeting all requirements.....	311	100	196	100	115	100
Total number of establishments with requirements.....	3,183	—	1,310	—	1,873	—
Number not meeting requirements as per cent of total with requirements.	10		15		6	

APPENDIX

SAMPLE OF QUESTIONNAIRE USED IN 1956 SURVEY

Survey of Working Conditions, April 1, 1956

Question 12: Training and Recruitment of Skilled Tradesmen

- (1) What is the approximate total number of skilled tradesmen currently employed in your establishment?.....(Number)
- (2) Do you have an organized trade training program to provide skilled tradesmen?.....(Yes or No).
 - (a) Apprenticeship training?.....(Yes or No).

If yes, how many are being trained?.....(Number)

Under an apprenticeship program, a trainee receives training in a specific skilled trade and advances by progressive stages to journeyman status.
 - (b) Other organized trade training?.....(Yes or No).

If yes, how many are being trained?.....(Number)

This category is intended to cover all those workers not included in (a) but who are receiving organized training for specific skilled trades along other than traditional apprenticeship lines.
- (3) During the past year, approximately what percentage of your requirements for skilled tradesmen was met by:
 - (a) your own organized training program?..... (Per cent)
 - (b) informal on-the-job training (upgrading)?..... (Per cent)
 - (c) hiring of qualified Canadian workers?..... (Per cent)
 - (d) hiring of qualified workers who have come to Canada within the last five years?..... (Per cent)
 - (e) other methods (please specify)?..... (Per cent)
 - (f) percentage of requirements for skilled tradesmen not met during past year..... (Per cent)

Total..... 100

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QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1957